

KK-L-170C
February 11, 1972
SUPERSEDING
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December 26, 1968

FEDERAL SPECIFICATION

LEATHER, KIDSKIN OR GOATSKIN, CHROME TANNED

This specification was approved by the Commissioner, Federal Supply Service, General Services Administration, for the use of all Federal agencies.

1. SCOPE AND CLASSIFICATION

1.1 Scope. This specification covers requirements for full grain, chrome tanned, kidskin and goatskin.

1.2 Classification.

1.2.1 Classes. The leather shall be furnished in the following classes as specified (see 6.2 and 6.4):

- Class 1 - Mildew-resistant treated.
- Class 2 - Not mildew-resistant treated.

2. APPLICABLE DOCUMENTS

2.1 The following documents, of the issues in effect on date of invitation for bids or request for proposal, form a part of this specification to the extent specified herein:

Federal Standards:

- Fed. Std. No. 123 - Marking for Domestic Shipment (Civil Agencies).
- Fed. Std. No. 311 - Leather, Methods of Sampling and Testing.

(Activities outside the Federal Government may obtain copies of Federal Specifications, Standards, and Handbooks as outlined under General Information in the Index of Federal Specifications and Standards and at the prices indicated in the Index. The Index, which includes cumulative monthly supplements as issued, is for sale on a subscription basis by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

FSC 8330

KK-L-170C

(Single copies of this specification and other Federal Specifications required by activities outside the Federal Government for bidding purposes are available without charge from Business Service Centers at the General Services Administration Regional Offices in Boston, New York, Washington, D.C., Atlanta, Chicago, Kansas City, Mo., Fort Worth, Denver, San Francisco, Los Angeles, and Seattle, Washington.

(Federal Government activities may obtain copies of Federal Specifications, Standards, and Handbooks and the Index of Federal Specifications and Standards from established distribution points in their agencies.)

Military Specification:

MIL-L-43432 - Leather, Packaging and Packing of.

(Copies of Military Specifications and Standards required by suppliers in connection with specific procurement functions should be obtained from the procuring activity or as directed by the contracting officer.)

3. REQUIREMENTS

3.1 Material. The leather shall be soft, pliable, full grain, chrome tanned goatskin or kidskin. The flesh side shall be smooth and free from loose flesh.

3.2 Physical requirements.

3.2.1 Trim (form and area). The leather shall be furnished in the form of whole skins and shall be trimmed in accordance with the definition of "trim" as listed under "Definition of Terms" in Fed. Std. No. 311. The area expressed in terms of square feet shall be legibly marked in the butt area on the flesh side of the leather.

3.2.2 Thickness. The thickness of the leather shall be as specified (see 6.2). A tolerance of $\pm 1/2$ ounce shall be permitted. The leather may be shaved, split or buffed on the flesh side to obtain the required thickness.

NOTE: 1 ounce = $1/64$ inch.

3.2.3 Color. The color of the leather shall be uniform and as specified (see 6.2).

3.2.4 Dyeing. When other than natural color is specified, the leather shall be drum dyed. The dye shall completely penetrate the leather from grain to flesh side.

KK-L-170C

3.2.5 Finish. The leather shall have a light application of finish on the grain surface.

3.2.6 Colorfastness (resistance to rubbing). The leather shall be tested for resistance to crocking in accordance with 4.3. When natural color is specified, the leather shall not be tested for crocking. Staining of the crock cloths shall be not lower numerically than Munsell value 9.0.

3.2.7 Staining. The leather shall be tested for resistance to staining in accordance with 4.3. Staining of the test pads shall be not lower numerically than AATCC value 4.

3.2.8 Finish stability. The finish shall not crack, part from the leather or become tacky when tested as specified in 4.3.

3.2.9 Cracking (low temperature). The leather shall not crack and the finish shall neither crack nor part from the leather when tested as specified in 4.3.

3.2.10 Elongation. Not less than 80 per cent of the specimens tested shall have a minimum elongation of 20 percent and a maximum elongation of 70 percent at a load of 25 pounds when tested as specified in 4.3. Any specimen that breaks or exhibits grain crack at or below 25 pounds shall be a test failure.

3.2.11 Stitch tearing strength. Not less than 80 percent of specimens tested shall have a minimum stitch tearing strength of 20 pounds when tested as specified in 4.3.

3.2.12 Shrinkage temperature. The shrinkage temperature of the leather shall be not less than 97°C when tested as specified in 4.3.

3.3 Chemical requirements.

3.3.1 Class 1. When class 1 leather is specified (see 6.2), the leather shall contain not less than 0.18 percent nor more than 0.70 percent paranitrophenol fungicide when tested as specified in 4.3.

3.3.2 The leather shall conform to the requirements of table I when tested as specified in 4.3.

KK-L-170C

TABLE I. Chemical requirements

Characteristic	Minimum	Maximum
Chloroform-soluble material (percent) <u>1/</u>	-	25.0
Ash (percent)' <u>1/</u>	-	9.0
Chromic oxide (percent) <u>1/</u>	3.0	-
pH value	3.3	-

1/ Calculated on the moisture free basis.

3.4 Workmanship. The leather shall conform to the quality and grade of product established by this specification. The occurrence of defects shall not exceed the applicable acceptable quality levels.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the supplier is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract or order, the supplier may use his own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to assure that supplies and services conform to prescribed requirements.

4.1.1 Certificate of compliance. Where certificates of compliance are submitted, the Government reserves the right to check test such items to determine the validity of the certification.

4.2 Inspection. Sampling for inspection shall be performed in accordance with Fed. Std. No. 311, except where otherwise indicated hereinafter.

4.2.1 Component and material inspection. In accordance with 4.1 above, components and materials shall be tested in accordance with all the requirements of referenced specifications, drawings, and standards, unless otherwise excluded amended, modified, or qualified in this specification or applicable purchase document.

KK-L-170C

4.2.2 Examination of the end item. The classification of defects found during the examination of the leather for visual and dimensional characteristics shall be in accordance with 4.2.2.1 and 4.2.2.2. The sample unit for these examinations shall be one whole skin. The lot size shall be expressed in units of one whole skin. Any sample unit containing one or more defects shall be classified as a defective unit. Sampling shall be performed in accordance with Fed. Std. No. 311 except that a sample size of 15 and a rejection number of 2 shall be applicable for thickness determinations on lots consisting of 51 or more skins. Separate examinations shall be performed for visual and dimensional characteristics, but the same sample may be used for each examination.

4.2.2.1 Examination for visual characteristics.

Examine	Defect
Material	Not full grain kidskin or goatskin
Trim	Not whole skins or not trimmed as specified.
Color	Not as specified. Not uniform throughout grain surface.
Dyeing	Dye does not completely penetrate from grain to flesh.
Quality of leather	Stain or foreign matter. Flesh side not free of loose flesh. Not soft and pliable. Any cut, hole, brand, hip mark, vein, scratch, wrinkle or other imperfections that individually or collectively cause more than a 15 percent loss in the total area of the skin.

NOTE: Light well healed scratches and grub holes, light wrinkles, and slight stains shall not be classified as defects.

4.2.2.2 Examination for dimensional characteristics.

Examine	Defect
Area (expressed in terms of square feet)	Less than area marked on skin.
Marking	Omitted, illegible, or not in area specified.
Thickness <u>1/</u>	Not as specified.

1/ Thickness shall be determined in accordance with method 1011 of Fed. Std. No. 311, except that no individual thickness measurement shall be less than the minimum or greater than the maximum specified.

KK-L-170C

4.2.3 Examination of preparation for delivery requirements. An examination shall be made in accordance with the provisions of MIL-L-43432 to determine whether packaging, packing and marking comply with the section 5 requirements.

4.3 End item testing. The methods of testing specified in Fed. Std. No. 311, wherever applicable and as listed in table II, shall be followed. Sampling procedure and location from which the sample unit is to be obtained shall be in accordance with Fed. Std. No. 311. All test reports shall contain the individual values utilized in expressing the final result. The lot shall be rejected if any one of the following conditions exist:

- a. More than three test failures occur for stitch tearing strength or elongation.
- b. More than one test failure occurs for the remaining requirements applicable to the sample unit.
- c. Any composite test result fails to meet the specified requirement.

TABLE II. End item tests

Characteristic	Requirement paragraph	Test method	Requirement applicable to	
			Sample unit	Composite
Material	3.1	<u>1/</u>	-	-
Colorfastness	3.2.6	3031	X	-
Staining	3.2.7	3021	X	-
Finish stability	3.2.8	4.4.1	X	-
Cracking	3.2.9	4.4.2	X	-
Elongation	3.2.10	2021	X	-
Stitch tearing strength	3.2.11	2151	X	-
Shrinkage temperature	3.2.12	7011	X	-
Paranitrophenol	3.3.1	6711	-	X

KK-L-170C

TABLE II. End item tests (cont'd)

Characteristic	Requirement paragraph	Test method	Requirement applicable to	
			Sample unit	Composite
Chloroform-soluble material	3.3.2	6341	-	X
Ash	3.3.2	6421	-	X
Chromic oxide	3.3.2	6515	-	X
pH value	3.3.2	6621	-	X

1/ Unless otherwise specified, a certificate of compliance shall be submitted and will be acceptable for the stated requirement.

4.4 Tests.

4.4.1 Finish stability. The leather specimen shall be cut from the sample unit and shall be 10 ± 2 centimeters square. The specimen shall be placed in a circulating air oven at 55° to 60°C by hanging so that complete circulation of the air around the specimen is possible. The specimen shall be exposed for $20 \pm 1/4$ hours and allowed to cool. After cooling, the leather specimen shall be doubled over with the grain side in, the folded edge creased slightly, and the finished grain surface rubbed together. The grain surface shall be examined for cracks, parting of the finish from the leather, and tackiness. One specimen shall be tested from each sample unit. The presence of cracks, parting of the finish from the leather and tackiness shall be reported.

4.4.2 Cracking (low temperature). The leather shall be tested in accordance with method 7211 of Fed. Std. No. 311 except that the specimen shall be exposed to a temperature of minus 20°C for 30 minutes and shall be bent grain side out through a radius of 180 degrees around a $1/4$ inch mandrel. The grain side of the leather shall be examined for cracks and parting of the finish from the leather in the area of the bend. The presence of cracks and parting of the finish from the leather shall be reported.

5. PREPARATION FOR DELIVERY

5.1 Packaging. Packaging shall be level A or C as specified (see 6.2).

KK-L-170C

5.1.1 Levels A and C. Leather shall be packaged in accordance with the applicable requirements of MIL-L-43432.

5.2 Packing. Packing shall be level A, B, or C as specified (see 6.2).

5.2.1 Levels A, B, and C. Leather shall be packed in accordance with the applicable requirements of MIL-L-43432.

5.3 Marking.

5.3.1 Civil agencies. In addition to any special marking required by the contract or order, interior packages and shipping containers shall be marked in accordance with Fed. Std. No. 123.

5.3.2 Military requirements. In addition to any special marking required by the contract or order, interior packages and shipping containers shall be marked in accordance with MIL-L-43432.

6. NOTES

6.1 Intended use. The leather is primarily intended for use in flying jackets, slippers, garments and equiptage items.

6.2 Ordering data. Purchasers should select the preferred options permitted herein and include the following information in procurement documents:

- (a) Title, number and date of this specification.
- (b) Class required (see 1.2.1),
- (c) Thickness required (see 3.2.2).
- (d) Color required (see 3.2.3).
- (e) Selection of the applicable levels of packaging and packing (see 5.1 and 5.2).

6.3 Staining. The AATCC Color Transference Chart can be obtained from National Headquarters, Box 12215, Research Triangle Park, North Carolina 27709.

6.4 Supersession data. The type I full grain leather with finish applied to grain side specified in KK-L-170B is the only type of leather covered by this specification, consequently, there is no longer a need to designate this leather as type I. The type III leather specified in KK-L-170B has been deleted in this specification based on a study which indicates there is no longer a need in Government for type III leather. The type II full grain oil resistant leather specified in KK-L-170A was deleted in KK-L-170B.

NK-L-170C

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SPECIFICATION Leather, Kidskin Or Goatskin, Chrome Tanned KK-L-170C		
ORGANIZATION		
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MATERIAL PROCURED UNDER A <input type="checkbox"/> DIRECT GOVERNMENT CONTRACT <input type="checkbox"/> SUBCONTRACT		
1. HAS ANY PART OF THE SPECIFICATION CREATED PROBLEMS OR REQUIRED INTERPRETATION IN PROCUREMENT USE? A. GIVE PARAGRAPH NUMBER AND WORDING.		
B. RECOMMENDATIONS FOR CORRECTING THE DEFICIENCIES		
2. COMMENTS ON ANY SPECIFICATION REQUIREMENT CONSIDERED TOO RIGID		
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SUBMITTED BY (Printed or typed name and activity - Optional)		DATE

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